The Printer Job Monitoring and Resource Accounting MIB Project

Statement of Charter:

This project shall develop a set of objects for monitoring of the status and progress of print jobs and to obtain resource accounting data at the completion of a job. The object set will initially be developed independent from the management system format. The object set development shall not preclude use of the set with either an SNMP MIB, a DMI MIF, or the SENSE protocol.

Use of the object set shall not be limited to printers. To obtain complete information regarding a print job in many printing systems will require the object set to be implemented into a file server, spooler, and/or a printer management system software.

When the object set is finalized, an SNMP MIB will be developed. The object set may also be ported to other formats, such as SENSE and a DMI MIF, as an extension to this project.

Goals:

1. The job MIB is intended to provide the following information for the indicated Role Models (see Appendix D - Roles of Users in the Printer MIB draft update to RFC 1759). A limited set of *mandatory* job and document attributes for a printer, plus a set of *optional* attributes, will be developed to provide this information.

User:
- (U1) - A timely notification that his job has completed and where.
- (U2) - The current status of the user's job (user queries).
- (U3) - Error and diagnostic information for jobs that did not successfully complete.
- (U4) - Ability to identify the least busy printer.

Operator:
- (OP1) - A presentation of the state of all the jobs in the print system.
- (OP2) - Which users submitted each job.
- (OP3) - What resources does each job need.
- (OP4) For which physical printers are the jobs candidates.
- (OP5) Some idea of how long each job will take.

Capacity Planner:
- (C1) - How busy are printers.
- (C2) - What time of day are they used.
- (C3) - How long do users' jobs wait before starting to print.

Accountant:
- (A1) - A record of resources used and printer usage data for charging users or groups for resources used.

2. The MIB will provide for printers that can contain more than one job at a time, but still be usable for low end printers that only contain a single job at a time. In particular, the

MIB shall meet the needs of Windows and other PC environments for managing low-end networked devices without unnecessary overhead or complexity, while also providing for higher end systems and devices.

3. ~~Since t~~The job MIB may also be transformed into a companion DMTF MIF. ~~, t~~The job MIB/MIF should meet the needs for managing devices using the DMTF DMI version 2, when the devices are directly connected to PCs.

4~~3~~. The MIB will provide job resource accounting information after the printer has finished printing the job. This resource accounting information is intended to be used by:

- A management station that is co-located with the printer to provide an enhanced console capability.

- End user job monitoring programs that provide status on progress and completion of jobs during the complete life cycle of the job, including a defined period after the job completes.

- System accounting programs that copy the completed job statistics to an accounting system. It is recognized that depending on accounting programs to copy MIB data during the job-retention period is somewhat unreliable, since the accounting program may not be running (or may have crashed).

- System usage statistics gathering programs that copy the completed job statistics to system usage logs.

5~~4~~. The MIB will provide a compatible subset of job and document attributes of the ISO DPA standard, so that coherence is maintained between the two protocols and information presented to end users and system operators. However, the printer job monitoring MIB is intended to be used with printers that implement other job submitting and management protocols, such as IEEE 1284.1 (TIPSI~~NPAP~~), as well as with ones that do implement ISO DPA. So nothing in the printer job monitoring MIB shall require implementation of the ISO DPA protocol.

6~~5~~. The MIB will be designed so that an additional MIB(s) can be specified in the future for monitoring multifunction (scan, FAX, copy) jobs. The job MIB will be designed such that a future multifunction job monitoring MIB will be able to use entire groups from this MIB.

7~~6~~. The MIB will not address any security issues. ~~provide a limited degree of security such that unauthorized users cannot access job information for jobs that are not theirs.~~ Security provisions will be limited only to those provided by SNMP, in current or future versions.

8~~7~~. The MIB will provide for the monitoring of jobs that clients submit directly to devices~~printers~~, to ~~printer~~ supervisor control programs, or to spooling ~~print~~ systems.

9~~8~~. The MIB will provide SNMP MIB access to jobs submitted to the device~~printer~~ by any protocol, including devices~~printers~~ that accept jobs using multiple protocols.

10~~9~~. Schedule:

Submit a request for an IETF charter for this project at the December IETF meeting. The request will not be submitted until a final draft of the Job Monitoring object set has been completed.